

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

CLAIMS LISTING (all of currently or previously presented claims 1-76)

Claim 1 (*Previously Presented*): A fork-liftable combination of a refuse container and a side-loading robotic arm mechanism for operative use with a supplied front-loading, waste collecting vehicle, where the vehicle has frontwardly extending forks and where said fork-liftable combination is characterized by:

(a) the side-loading robotic arm mechanism having a major portion of its mass mounted rearward of a rearmost, refuse-containing wall of a major refuse containing volume defined by the container when said combination is liftably and operatively supported in front of a supplied waste collecting vehicle; and

(b) the container having fork-receiving pocket means attached to sides of the container for receiving the forks of the supplied front-loading vehicle and thus allowing said combination to be fork-liftable, where the fork-receiving pocket means extend or are extendible rearwardly of said rearmost refuse-containing wall of the container so as to space the rearward-mounted major-mass portion of the robotic arm mechanism in front of a hypothetical clearance plane, where the clearance plane extends through rearward pocket-approaching points of the forks of the front-loading vehicle so as to limit possibility of collision between the vehicle and the major-mass portion of the robotic arm mechanism due to the vehicle moving forward towards the hypothetical clearance plane and due to a lifting by the vehicle of the fork-liftable combination.

Claim 2 (*Currently Amended*): The combination of Claim 1 and further wherein:

(c) a protective cage is provided extending about at least a portion of the rearward-mounted major-mass portion of the robotic arm mechanism so as to protect the rearward-mounted major-mass portion from short dump collisions ~~of the rear part of the robotic arm mechanism~~ with the vehicle while the vehicle is lifting said fork-liftable combination.

Claim 3 (*Original*): The combination of Claim 2 and further wherein:

(c.1) the protective cage includes a first protective crossbar extending from a left side to a right side of the fork-receiving pocket means.

Claim 4 (*Original*): The combination of Claim 3 and further wherein:

(c.2) the protective cage includes a second protective bar extending in a direction different than the extension direction of the first protective crossbar.

Claim 5 (*Previously Presented*): The combination of Claim 4 and further wherein:

(c.3) at least one of said first protective crossbar and second protective bar has an elastomeric bumper attached thereto.

Claim 6 (*Previously Presented*): The combination of Claim 1 and further wherein:

(b.1) the fork-receiving pocket means includes a vibration dampener interposed between a fork-engaging portion and a container-supporting portion of the fork-receiving pocket means, wherein said fork-engaging portion includes metal.

Claim 7 (*Previously Presented*): The combination of Claim 1 and further wherein:

(b.1) the fork-receiving pocket means includes one or more support ribs disposed rearward of the rearmost, refuse-containing wall of the fork-liftable container, said support ribs providing triangulating support between a top surface of the fork-receiving pocket means and a reinforcing side bracket that attaches to the container.

Claim 8 (*Previously Presented*): The combination of Claim 1 and further wherein:

(c.1) the fork-liftable container includes a rearward-extending support member which extends rearwardly from a main body portion of the container and provides mechanically reinforcing support at least to corresponding portions of the fork-receiving pocket means which extend rearwardly of the rearmost, refuse-containing wall.

Claim 9 (*Original*): The combination of Claim 1 and further wherein:

(a.1) the rearward-mounted major-mass portion of the robotic arm mechanism includes at least a first motor for mechanically driving sideways translation of a corresponding robotic arm so as to provide for reaching out to grasp waste items located to the side of the container.

Claim 10 (*Original*): The combination of Claim 9 and further wherein:

(a.2) the rearward-mounted major-mass portion of the robotic arm mechanism further includes a second motor for mechanically driving rotation of the corresponding robotic arm for translating grasped waste items along an arc-shaped path which extends to over a top portion of the fork-liftable container.

Claim 11 (*Original*): The combination of Claim 10 and further wherein:

(a.3) the rearward-mounted major-mass portion of the robotic arm mechanism further includes a third motor for mechanically driving grasping by the corresponding robotic arm of to-be-grasped waste items.

Claim 12 (*Previously Presented*): The combination of Claim 10 and further wherein:

(a.3) the rearward-mounted major-mass portion of the robotic arm mechanism further includes a third motor for mechanically driving a retractable lowering of a corresponding, retractable leg for retractable engagement with a support surface below the robotic arm mechanism.

Claim 13 (*Previously Presented*): A robotic waste collecting apparatus comprising:

(a) a fork-liftable refuse container for use with a front-loading, waste collecting vehicle, where the vehicle has frontwardly extending forks, where the container has frontmost and rearmost, refuse-containing walls; and

(b) a side-loading robotic arm mechanism, coupled to the container so as to be lifted with the container when the container is fork-lifted, said robotic arm mechanism having one or more robotic arms each configured to automatically reach out in a sideways direction relative to the container to grasp waste items located to the side of the container, and to translate the grasped waste items for automatic deposit of refuse portions thereof into the container between said frontmost and rearmost, refuse-containing walls; and further wherein:

(b.1) the robotic arm mechanism has a plurality of motors for mechanically driving at least the reaching-out, grasping and further translating actions of said one or more robotic arms, and at least two of said plural motors are mounted rearward of the rearmost, refuse-containing wall of the container.

Claim 14 (*Previously Presented*): The robotic waste collecting apparatus of Claim 13 and further wherein:

(b.1) the container has fork-receiving pocket means attached to sides of the container for receiving the forks of the front-loading vehicle, where the fork-receiving pocket means extend rearwardly of said rearmost refuse-containing wall of the container so as to space the rearward-mounted motors of the robotic arm mechanism in front of a hypothetical clearance plane, where the clearance plane extends through rear end points of the forks of the front-loading vehicle when the forks are fully inserted into the pocket means.

Claim 15 (*Previously Presented*): The robotic waste collecting apparatus of Claim 14 and further wherein:

(b.2) the fork-receiving pocket means includes a vibration dampener interposed between a fork-engaging portion and a container-supporting portion of the fork-receiving pocket means, wherein said fork-engaging portion includes metal.

Claims 16-19: (*Canceled*).

Claim 20 (*Currently Amended*): A waste collecting system comprising:

(a) a fork-liftable, waste-containerizing vessel having spaced-apart, frontmost and backmost waste-retaining surfaces, where a waste-containment space is defined between the frontmost and backmost waste-retaining surfaces;

(b) a waste-grasping robot provided adjacent to the vessel and adapted to move waste external of the vessel into the waste-containment space, said vessel and robot being adapted to be lifted and supported by a supplied fork lift means, and said vessel and robot being movable as a unit when lifted and supported by a the supplied fork lift means, said robot having one or more motor means for outputting mechanical power enabling the robot to move the waste, said robot having a retractable grasping arm for enabling the robot to move the waste, said robot having a total mass comprised at least of masses of said one or more motor means and of the retractable grasping arm; and

(c) an interface;

where a major portion of the total mass of the robot is located between said interface and the backmost waste-retaining surface, and

where the interface comprises one or more elements of the interface group consisting of:

(c.1) a power source coupling that can be coupled to a supplied power source to provide power to one or more of said motor means;

(c.2) a robot controller operatively coupled to a respective one or more of the motor means for controlling actions taken by the respective one or more of the motor means;

(c.3) disconnectable hydraulic connection means for operatively coupling a respective one or more of the motor means to a supplied hydraulic power source; and

(c.4) transport movement controlling means for controlling movement as a unit of the fork-liftable, waste-containerizing vessel and of the waste-grasping robot.

Claim 21 (*Currently Amended*): The waste collecting system of Claim 20 wherein said supplied fork lift means comprises a plurality of forks and attaches to a supplied waste collecting vehicle and said vehicle has a transparent operator windshield, a pair of lift arms and a pair of fork pistons for tilting corresponding forks of the fork lift means, and wherein:

when said vessel and robot are supported as an integrally movable unit by a ~~the~~ supplied waste collecting vehicle ~~that includes fork lift means and has a transparent operator windshield, a pair of lift arms and a pair of fork pistons for tilting corresponding forks of the fork lift means,~~ then the major portion of the total mass of the robot is located between said backmost waste-retaining surface and at least one of:

- (c.5) the transparent windshield through which an operator can view operations of the robot;
- (c.6) the pair of lift arms which support the weight of the vessel and robot;
- (c.7) the pair of fork pistons which are operatively coupled to tilt as a unit, the combination of the fork-liftable, waste-containerizing vessel and the waste-grasping robot; and
- (c.8) the waste collecting vehicle.

Claim 22 (*Previously Presented*): A waste collecting system comprising:

(a) a fork-liftable, waste-containerizing vessel having spaced-apart, frontmost and rearmost waste-retaining surfaces, where a waste-containment space is defined between the frontmost and rearmost waste-retaining surfaces, and

(a.1) where the vessel has fork-receiving pockets adapted to receive lifting forks introduced from the rear of the vessel, where at least one of the pockets does not extend frontwardly up to or beyond the frontmost waste-retaining surface of the vessel; and

(b) a waste-grasping robot provided adjacent to the vessel and adapted to move waste external of the vessel into the waste-containment space, said vessel and robot being movable as a unit while supported by forks introduced into the fork-receiving pockets; said robot having one or more motor means for

outputting mechanical power enabling the robot to move the waste, said robot having a retractable grasper for enabling the robot to grasp the waste, said robot having a total mass comprised at least of masses of said one or more motor means and of the retractable grasper,

(b.1) where a major portion of the total mass of the robot is located rearward of the rearmost waste-retaining surface of the vessel.

Claim 23 (*Previously Presented*): The waste collecting system of Claim 22 and further wherein:

(a.2) at least one of the fork-receiving pockets extends or is extendible rearwardly at least 10 inches beyond the rearmost waste-retaining surface.

Claim 24 (*Previously Presented*): The waste collecting system of Claim 22 and further comprising:

(c) spacing means for keeping the major mass portion of the robot disposed forward of a hypothetical clearance plane where said hypothetical clearance plane extends substantially parallel to the rearmost waste-retaining surface of the vessel when a bottom surface of the vessel is substantially level to ground during a waste collecting run, the spacing provided by said spacing means assuring a predefined clearance space in which the retractable grasper and one or more of the motor means may operate during the waste collecting run without encountering an obstacle.

Claim 25 (*Previously Presented*): The waste collecting system of Claim 22 and further comprising:

(c) a bumper pad adjacent to the rearmost waste-retaining surface of the waste-containerizing vessel so as to absorb mechanical shocks directed frontwardly toward the rearmost waste-retaining surface.

Claim 26 (*Previously Presented*):

A waste collecting system comprising:

(a) a fork-liftable, waste-containerizing vessel having spaced-apart, frontmost and backmost waste-retaining surfaces, where a waste-containment space is defined between the frontmost and backmost waste-retaining surfaces;

(b) a waste-grabbing robot provided adjacent to the vessel and adapted to move waste external of the vessel into the waste-containment space, said vessel and robot being movable as a unit when supported by a supplied fork lift means; said robot having one or more motor means for outputting mechanical power enabling the robot to move the waste, said robot having retractable grasping digits for enabling the robot to grasp the waste or a container of the waste, said robot having a total mass comprised at least of masses of said one or more motor means and of the retractable grasping digits, where a major portion of the total mass of the robot is located rearward of the backmost waste-retaining surface of the vessel; and

(c) a bumper means disposed adjacent to the backmost waste-retaining surface of the waste-containerizing vessel so as to absorb mechanical shocks directed frontwardly toward the backmost waste-retaining surface.

Claims 27-30: (*Canceled*).

Claims 31-39: (*Canceled*).

Claims 40-42: (*Canceled*).

Claim 43 (*Previously Presented*): The combination of Claim 6 wherein:

(b.1a) the vibration dampener includes a viscoelastic fluid.

Claim 44 (*Previously Presented*): The combination of Claim 6 wherein:

(b.1a) the vibration dampener has one or more holes defined therethrough for receiving fork retaining pins.

Claim 45 (*Previously Presented*): The combination of Claim 6 wherein:

(b.1a) the vibration dampener includes at least one of a cam and a screw for variably adjusting compression of a corresponding one or more elastomeric members of the damper.

Claim 46 (*Previously Presented*): The combination of Claim 6 wherein:

(b.1a) the vibration dampener includes at least two differently oriented elastomeric members that are respectively oriented to absorb vibrations propagated along respective different planes.

Claim 47 (*Previously Presented*): The combination of Claim 1 wherein:

(a.1) the rearward-mounted major-mass portion of the robotic arm mechanism includes at least a first motor having a mechanical movement linkage coupled to the first motor for transferring mechanical power of the first motor to a second portion of the robotic arm mechanism that is not rearward of said rearmost refuse-containing wall.

Claim 48 (*Currently Amended*): An integrally liftable combination of a side-loading robotic arm mechanism and an intermediate refuse container, the refuse container defining a total refuse containment ~~containing~~ volume into which the robotic arm mechanism can deposit refuse during collections of refuse from curb-side ~~distances~~ locations spaced away from a curb-adjacent side of the intermediate refuse container, said combination being adapted for use with a predefined front-loading, waste collecting vehicle that can liftablely supports— the combination in front of the vehicle while the vehicle moves forward during said collections of refuse from the curb-side ~~distances~~, locations, the integrally liftable combination being characterized by:

(a) at least a first major mass portion of the robotic arm mechanism being disposed rearward of the total refuse containment ~~containing~~ volume into which the robotic arm mechanism can deposit refuse during said collections of refuse from the curb-side locations, ~~distances~~ the rearward disposed major mass portion being located so as to be interposed between the total refuse

containment volume and the waste collecting vehicle when said combination is liftably supported in front of the vehicle; and

(b) the liftable combination having means for preventing collisions of the major mass portion with the waste collecting vehicle.

Claim 49 (Currently Amended): The integrally liftable combination of Claim 48 wherein said side-loading robotic arm mechanism includes a grasper and a toward-curb -side extendable portion carrying the grasper where the toward-curb extendable portion that is translatable away from the curb-side of the intermediate refuse container so that the robotic arm mechanism can use the extendable portion for reaching out in a towards-curb -side direction of the container for grasping refuse or refuse-filled receptacles with the grasper from said curb-side locations, distances wherein the predefined front-loading waste collecting vehicle has a plurality of lift arms including a curb-side lift arm and wherein the ~~integrally liftable combination~~ means for preventing collisions comprises:

(b.1) a spacer that spaces the toward-curb -side extendable portion of the robotic arm mechanism forward of the lift arms of the predefined waste collecting vehicle so that the robotic arm mechanism can use the toward-curb -side extendable portion to reach out towards the curb-side without the toward-curb -side extendable portion colliding into at least -a- the curb-side one of the lift arms of the waste collecting vehicle.

Claim 50 (Currently Amended): The integrally liftable combination of Claim 49 wherein said predefined waste collecting vehicle can lift- the combination as an integrally lifted combination during a rearward and over-the-top dump operation, wherein during said over-the-top dump operation, refuse in the intermediate container can be transferred rearwardly to a rearward refuse hopper of the waste collecting vehicle and wherein:

(b.2 ~~b.1~~) said spacer spaces the ~~first~~ major mass portion of the robotic arm mechanism apart from at least one of the intermediate container and a front bulk portion of the waste collecting vehicle during the over-the-top dump

operations such that the ~~first~~ major mass portion of the robotic arm mechanism is not crushed between the intermediate container and the front bulk portion of the waste collecting vehicle during the over-the-top dump operations.

Claim 51 (*Currently Amended*): The integrally liftable combination of Claim 49 wherein said waste collecting vehicle includes a container-pivoting piston coupled at least to ~~a~~ the curbside one of said lift arms so as to enable pivoting of the intermediate container and wherein:

(~~b.2~~ b.1) said spacer spaces the toward-curb ~~side~~ extendable portion of the robotic arm mechanism forward of the curbside container-pivoting piston of the waste collecting vehicle so that the robotic arm mechanism can use the toward-curb ~~side~~ extendable portion to reach out towards the curb ~~side~~ without the toward-curb ~~side~~ extendable portion colliding into the curbside container-pivoting piston.

Claim 52 (*Currently Amended*): The integrally liftable combination of Claim 51 wherein the grasper has digits for grasping refuse and refuse containers of random configurations, wherein the robotic arm mechanism includes a grasper grasper has ~~having~~ a clenched-digits grasping mode and a spread-open digits nongrasp mode and wherein:

(~~b.3~~ b.2) said spacer spaces the robotic arm mechanism forward of the curbside container-pivoting piston of the waste collecting vehicle so that the robotic arm mechanism can deploy the grasper in its spread-open digits nongrasp mode and simultaneously translate the spread-open digits grasper to reach out towards the curb ~~side~~ for subsequently grasping refuse or a refuse-filled receptacle from said curb-side locations ~~distances~~ without the toward-curb ~~side~~ heading but spread-open grasper colliding into the curbside container-pivoting piston.

Claim 53 (*Currently Amended*): The integrally liftable combination of Claim 49 wherein:

(a.1) said ~~first~~ major mass portion of the robotic arm mechanism includes a toward-curb ~~side~~ translating motor for translating the toward-curb ~~side~~ extendable portion away from the curb-side of the intermediate refuse container.

Claim 54 (*Currently Amended*): The integrally liftable combination of Claim 53 wherein the ~~robotic arm mechanism includes a grapser~~ grasper ~~has~~ having a grasping mode and an ungrasping mode and wherein:

(a.2) said ~~first~~ major mass portion of the robotic arm mechanism includes a lifting motor for lifting said grasper to a position above a top opening of the intermediate container.

Claim 55 (*Currently Amended*): The integrally liftable combination of Claim 54 wherein:

(a.3) said ~~first~~ major mass portion of the robotic arm mechanism includes a grasp motor for powering the ~~grapser~~ grasper into at least one of the grasping mode and the ungrasping mode.

Claim 56 (*Currently Amended*): The integrally liftable combination of Claim 49 wherein the ~~robotic arm mechanism includes a grapser~~ grasper ~~has~~ having a grasping mode and an ungrasping mode and wherein:

(a.1) said ~~first~~ major mass portion of the robotic arm mechanism includes a lifting motor for lifting said grasper to a position above a top opening of the intermediate container.

Claim 57 (*Currently Amended*): The integrally liftable combination of Claim 49 wherein the ~~robotic arm mechanism includes a grapser~~ grasper ~~has~~ having a grasping mode and an ungrasping mode and wherein::

(a.1) said ~~first~~ major mass portion of the robotic arm mechanism includes a grasp motor for powering the ~~grapser~~ grasper into at least one of the grasping mode and the ungrasping mode.

Claim 58 (*Currently Amended*): The integrally liftable combination of Claim 49 wherein:

(b.2 ~~b.4~~) said spacer includes insertion blocking pins disposed in fork-receiving openings of the container for preventing lifting forks of the vehicle from being inserted beyond a depth where the toward-curb ~~side~~ extendable portion will collide into a curbside one of the lift arms when reaching out towards the curb ~~side~~ and to grasp refuse from said curb-side locations ~~distances~~.

Claim 59 (*Currently Amended*): The integrally liftable combination of Claim 49 wherein:

(b.2 ~~b.4~~) said spacer includes a clamp for preventing lifting forks of the vehicle from being inserted into fork-receiving openings of the container beyond a depth where the toward-curb ~~side~~ extendable portion will collide into a curbside one of the lift arms when reaching out towards the curb ~~side~~ and to grasp refuse from said curb-side locations ~~distances~~.

Claim 60 (*Currently Amended*): The integrally liftable combination of Claim 49 wherein:

(b.2 ~~b.4~~) said spacer includes a crossbar bumper for preventing a crossbar extending between lifting forks of the vehicle from being advanced during fork insertion beyond a position relative to the container where the toward-curb ~~side~~ extendable portion will begin to collide into a curbside one of the lift arms when reaching out towards the curb ~~side~~ and to grasp refuse from said curb-side locations ~~distances~~.

Claim 61 (*Currently Amended*): The integrally liftable combination of Claim 49 wherein:

(~~b.2~~ ~~b.4~~) said spacer includes a rearwardly extended, fork-receiving pocket that extends rearward of said refuse containment ~~containing~~ volume by sufficient length to prevent the toward-curb ~~-side~~ extendable portion of the robotic arm mechanism from colliding into a curbside one of the lift arms when reaching out towards the curb ~~-side~~ to grasp refuse from said curb-side locations ~~distances~~.

Claim 62: (Canceled).

Claim 63 (*Currently Amended*): The integrally liftable combination of Claim 48 ~~49~~ wherein:

(a.1) said first portion of the robotic arm mechanism defines a first leg of an L-shaped configuration that wraps adjacent to the refuse containment ~~containing~~ volume, and

(a.2) a second portion of the robotic arm mechanism defines a second leg of the L-shaped configuration, said second portion including said grasper a ~~refuse grasping part of the robotic arm mechanism~~.

Claim 64 (*Currently Amended*): The integrally liftable combination of Claim 48 and further comprising:

(b) a protective cage provided rearward of said ~~first~~ major mass portion of the robotic arm mechanism for protecting the ~~first~~ major mass portion from rear side collisions, where the protective cage does not define a view-blocking complete wall rearward of said ~~first~~ major mass portion of the robotic arm mechanism thereby reducing the mass of the protective cage to less than that of a view-blocking complete wall and thereby not fully blocking view of the ~~first~~ major mass portion of the robotic arm mechanism from a position rearward of the protective cage.

Claim 65 (*Currently Amended*): The integrally liftable combination of Claim 48 wherein:

(a.1) said ~~first~~ major mass portion of the robotic arm mechanism has visibly disposed at an externally visible rear or top area thereof at least one member of a viewable group consisting of:

(a.1a) a hydraulic hose coupling; and

(a.1b) an electrical cable coupling; and

~~(a.1c) a moving mechanical part,~~

where said disposition at the externally visible rear or top area allows an operator of the front-loading, waste collecting vehicle to view the viewable group member while operating the vehicle during said collections of refuse from the curb-side locations ~~distances~~.

Claim 66 (*Currently Amended*): The integrally liftable combination of Claim 48 wherein:

(a.1) said ~~first~~ major mass portion of the robotic arm mechanism includes an automatically retractable leg that can extend down to an underlying surface to provide reinforcement against ~~curbside-directed~~ reciprocations of the robotic arm mechanism.

Claim 67 (*Currently Amended*): The integrally liftable combination of Claim 48 wherein:

said robotic arm mechanism detachably attaches to the intermediate refuse container ~~in modular fashion~~ such that a same robotic arm mechanism can at different times be detachably attached in ~~modular fashion~~ to intermediate refuse containers of different weights or compositions depending on types of refuse to be collected in different refuse collecting runs.

Claim 68 (Currently Amended): A refuse collection apparatus for use with a front loading collection vehicle comprising:

(a) a refuse container having at least one refuse containment compartment, the refuse container being mountable on a front portion of the front loading collection vehicle and defining a total, front-loaded refuse containment volume for the collection vehicle; and

(b) a side-loading robotic arm mechanism coupled to the refuse container such that the robotic arm mechanism and the refuse container are supported as an integrally translatable unit by the front loading collection vehicle during refuse collection operations, wherein:

(b.1) said robotic arm mechanism has at least a first robotic actuating portion thereof located to the rear of and external to the container, said actuating portion being located so as to be interposed between the refuse containment compartment and the collection vehicle when said integrally translatable unit is supported by the vehicle; and

(c) means for preventing collisions of the first robotic actuating portion with the collection vehicle.

Claim 69 (Currently Amended): An integrally liftable combination of a side-loading robotic arm mechanism and an intermediate refuse holder, the refuse holder having a floor member defining a total refuse supporting surface onto which the robotic arm mechanism can deposit refuse during collections of refuse from curb-side ~~distances~~ locations spaced away from the intermediate refuse holder, said combination being adapted for use with a front-loading, waste collecting vehicle that liftably supports the combination in front of the vehicle while the vehicle moves forward during said collections of refuse from the curb-side ~~distances~~, locations, the integrally liftable combination being characterized by:

(a) at least a first portion of the robotic arm mechanism being disposed rearward of the refuse supporting surface onto which the robotic arm mechanism can deposit refuse during said collections of refuse from the curb-side ~~distances~~, where the first portion is located so as to be interposed

between the refuse supporting surface and the waste collecting vehicle when said combination is liftably supported by the vehicle; and

(b) said combination including means for preventing collisions of the first portion of the robot arm mechanism with the collecting vehicle.

Claim 70 (Currently Amended): An integrally translatable combination of a robotic arm mechanism and a refuse storing unit defining a total refuse containment volume into which the robotic arm mechanism ~~deposits~~ can deposit refuse, where said combination is adapted for being ~~can be~~ carried by a prespecified front-loading, waste collecting vehicle that is configured to liftably support ~~[[s]]~~ the combination in front of the vehicle while the vehicle moves forward during collections of refuse from locations generally forward of the vehicle, the integrally translatable combination being characterized by:

(a) at least a first portion of the robotic arm mechanism being disposed rearward of the refuse storing unit during said collections of refuse from locations generally forward of the vehicle, where the first portion is located so as to be interposed between the refuse storing unit and the waste collecting vehicle when said combination is liftably supported by the vehicle; and

(b) said combination having a control interface for coupling to the vehicle and carrying control signals between the vehicle and the robotic arm mechanism when said combination is liftably supported by the vehicle and the first portion is interposed between the refuse storing unit and the waste collecting vehicle.

Claim 71 (Previously Presented): The integrally translatable combination of claim 70 wherein said first portion of the robotic arm mechanism constitutes a major mass portion of the robotic arm mechanism.

Claim 72 (Previously Presented): The integrally translatable combination of claim 70 wherein said first portion of the robotic arm mechanism constitutes a major mass portion of the combination when the refuse storing unit is not filled with refuse.

Claim 73 (Previously Presented): The integrally translatable combination of claim 70 wherein said first portion of the robotic arm mechanism includes one or more translating motors that translate a grasping part of the robotic arm mechanism both away from and back toward the refuse storing unit.

Claim 74 (Currently Amended): An integrally translatable combination of a robotic arm mechanism and a total refuse supporting storage ~~onto~~ into which the robotic arm mechanism can deposit ~~[[s]]~~ refuse, where said combination ~~can~~ is adapted to be carried by a front-loading, waste collecting vehicle that liftably supports the combination in front of the vehicle while the vehicle moves forward during collections of refuse, the integrally translatable combination being characterized by:

at least a first portion of the robotic arm mechanism being disposed rearward of the refuse supporting storage during said collections of refuse, where the first portion is located so as to be interposed between the refuse supporting storage and the waste collecting vehicle when said combination is liftably supported by the vehicle; and

said combination having a power interface for coupling to the vehicle and transmitting power from the vehicle to the robotic arm mechanism when said combination is liftably supported by the vehicle and the first portion is interposed between the refuse supporting storage and the waste collecting vehicle.

Claim 75 (Currently Amended): A refuse collection apparatus for use with a prespecified front loading collection vehicle, the apparatus comprising:

(a) a refuse containment structure, adapted to be mountable on a front portion of the front loading collection vehicle and defining a total refuse containment volume for the front portion of the vehicle; and

(b) a side-loading robotic arm mechanism coupled to the refuse containment structure and situated for depositing refuse into said total refuse containment volume during refuse collection operations carried out by a front loading collection vehicle that supports the apparatus, the robotic arm mechanism being further coupled to the refuse containment structure such that the robotic arm mechanism and the refuse

containment structure are liftably supported as an integrally translatable unit by the front loading collection vehicle during refuse collection operations, wherein:

(b.1) said robotic arm mechanism has at least a first robotic actuating portion thereof located externally and to the rear of the refuse containment structure, where the first robotic actuating portion is located so as to be interposed between the refuse containment structure and the collection vehicle when said integrally translatable unit is liftably supported by the vehicle and the first robotic actuating portion is structured to be powered by the vehicle when liftably supported by the vehicle.

Claim 76 (Currently Amended): A refuse collection apparatus for use with a supplied front loading collection vehicle, the apparatus comprising:

(a) a refuse storing structure mountable on a front portion of said front loading collection vehicle and characterized by:

(a.1) a total refuse receiving and containing, front volume being defined by the refuse storing structure; and

(a.2) the refuse storing structure having a rearmost refuse containment wall defining a trailing wall of said refuse receiving and containing volume when said apparatus is operatively mounted on said front loading collection vehicle and said front loading collection vehicle moves in a forward direction; and

(b) a side-loading robotic arm mechanism coupled to said refuse storing structure so that the robotic arm mechanism and the refuse storing structure form an integrally liftable unit, and wherein:

(b.1) said robotic arm mechanism has at least a first robotic actuating portion thereof located to the rear of said rearmost refuse containment wall, where the first robotic actuating portion is positioned so as to be interposed between the rearmost refuse containment wall and the collection vehicle when said integrally liftable unit is liftably supported by the vehicle; and

(b.2) said side-loading robotic arm mechanism is capable of reaching out for refuse, transporting reached out-for refuse towards the total refuse receiving and containing, front volume and depositing the transported refuse into said volume while said apparatus is liftably supported by the supplied front loading collection vehicle. ***